Math 10 Chapter 5 Review Name Key /47

1. The table below shows English words and the number of letters in the word.

Words	Letters
Dog	3
Horse	5
Elephant	8
Pig	3

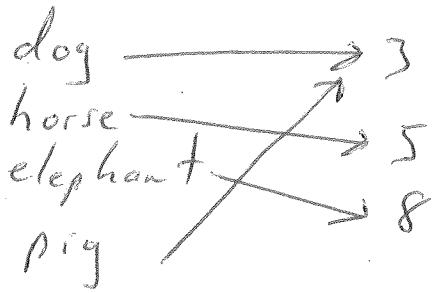
a) Describe the relation in words. (1 mark)

Words & the number of letters they have

b) Represent the relation as a set of ordered pairs. (2 marks)

(dog, 3) (horse, 5) (elephant, 8) (pig, 3)

c) Represent the relation as an arrow diagram. (2 marks)



2. Looking back at question #1, write out the domain and range for the relation. (2 marks)

D: {dog, horse, elephant, pig}

R: {3, 5, 8}

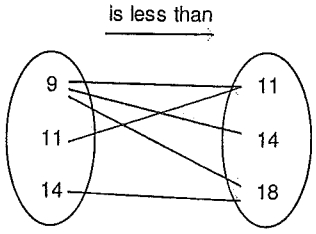
3. Which of the following represent a function? (2 marks)
(Put Function or Not a Function in blanks)

a) {(3, 4), (2, 4), (1, 5)} Func

b) {(2, 1), (2, 2), (3, 1), (3, 2)} Not Func

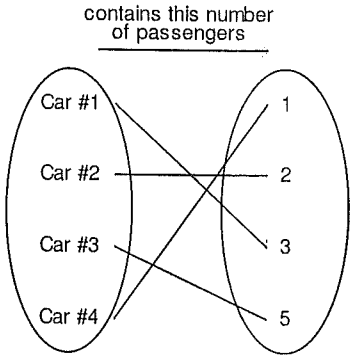
4. Which of the following represent a function? (2 marks)
(Put Function or Not a Function in blanks)

a)



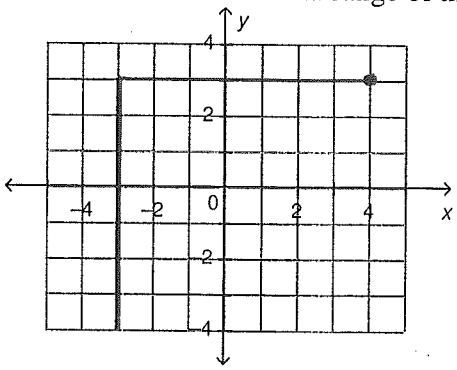
Not Func

b)



Function

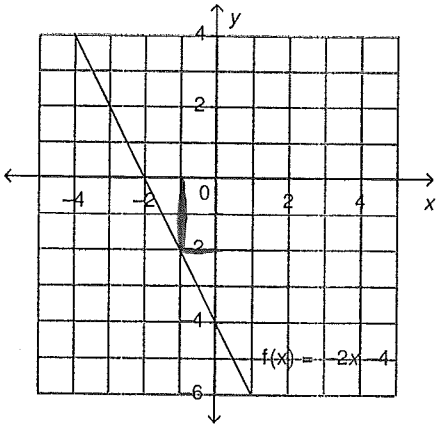
5. Determine the domain and range of this graph. (3 marks)



Domain: $[-3, 4]$

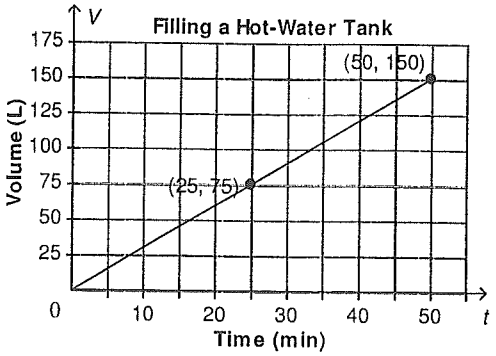
Range: $(-\infty, 3]$

6. This is a graph of the function $f(x) = -2x - 4$. Determine the domain value when the range value is –2. (1 mark)



$x = -1$ @ $y = -2$

7. This graph represents a 150-L hot-water tank being filled at a constant rate. Determine the rate of change of the relation. (2 marks)



$$roc = \frac{150-75}{50-25} = \frac{75}{25}$$

$$= 3\,L/min$$

8. The altitude of a plane, *a* metres, is related to the time, *t* minutes, that has elapsed since it started its ascent. Determine the rate of change of this linear relation. (2 marks)

***t* (min)**	0	2	4	6	8
***a* (m)**	4000	5400	6800	8200	9600

$$roc = \frac{9600-8200}{8-6} = \frac{1400}{2} = 700\,m/min$$

9. Given the equation y = 2x + 3, find the rate of change for this relation. (2 marks)
(Hint: you may want to make a table of values to help answer this question!)

$y = 2x + 3$

x	y
0	3
1	5
2	7

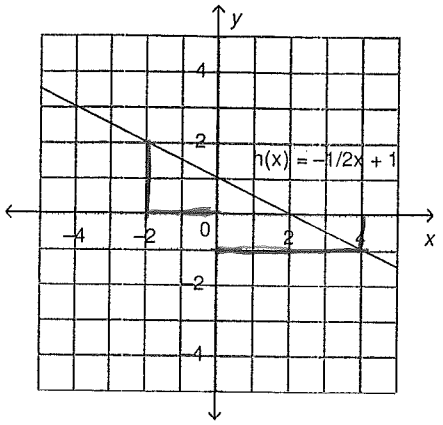
$$roc = \frac{7-5}{2-1} = 2$$

10. Which set of ordered pairs represents a linear relation? (2 marks)
(Put Linear Relation or Not a Linear Relation in the blanks.)

a) {(5, 10), (6, 20), (7, 40)} Not Linear

b) {(30, 10), (20, 20), (10, 30)} Linear

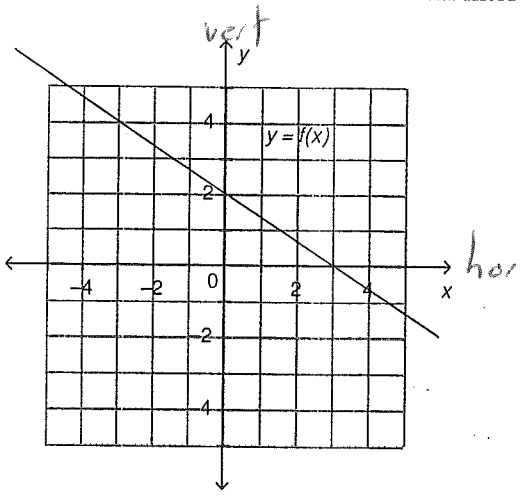
11. This is a graph of the function $h(x) = -\frac{1}{2}x + 1$. (2 marks)



a) Determine the range value when the domain value is –2. 2

b) Determine the domain value when the range value is –1. 4

12. Determine the vertical and horizontal intercepts of this graph. (2 marks)



hor : 3

vert : 2

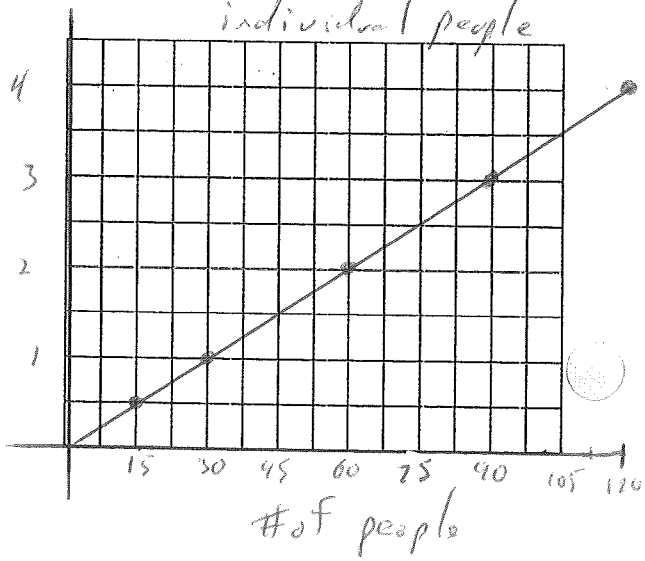
13. For this table of values, (3 marks)

a) Graph the data. Will you join the points? Justify your answer. yes, too many points for individual people

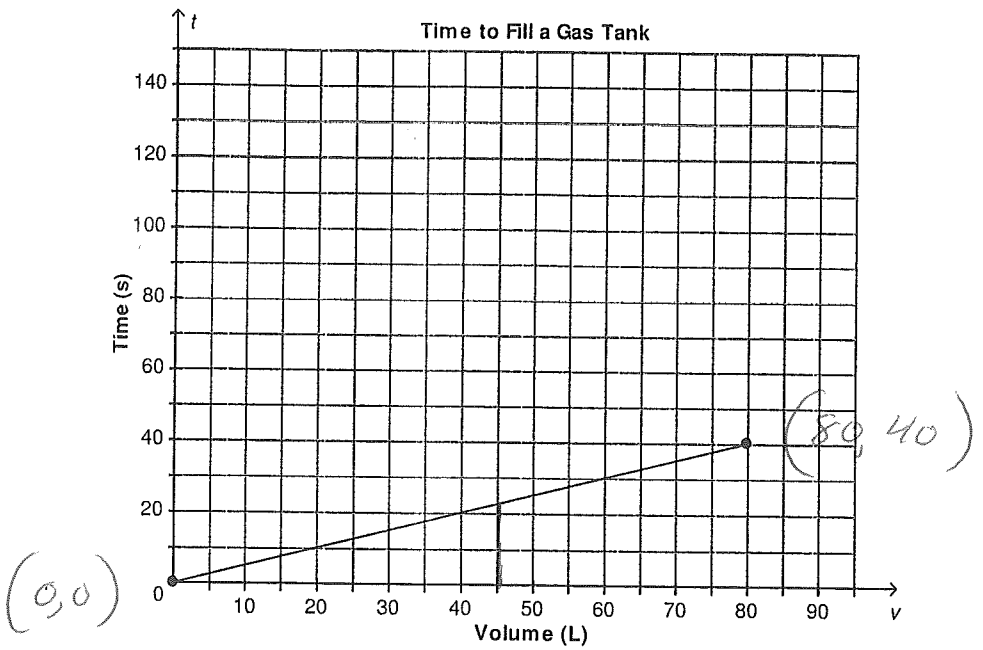
b) Does the graph represent a function? Explain. yes, one input for each output

People, n	Cost, C ($)
15	0.50
30	1.00
60	2.00
90	3.00
120	4.00

Cost For Something.



14. This graph shows the time it takes to fill a gas tank from empty.



a) Determine the rate of change. (2 marks)

$$roc = \frac{40-0}{80-0} = \frac{1}{2} \quad \frac{1\text{ sec}}{2}/L$$

b) Write the domain and range. (2 marks)

D: $[0, 80]$ $\quad 0 \le L \le 80$

OR

R: $[0, 40]$ $\quad 0 \le s \le 40$

c) About how long will it take to fill a 45-L gas tank? (1 mark)

about 22 seconds

15. Given f(x) = 4x – 10, (2 marks)

a) find f(3)

$$F(3) = 4(3) - 10 = 2$$

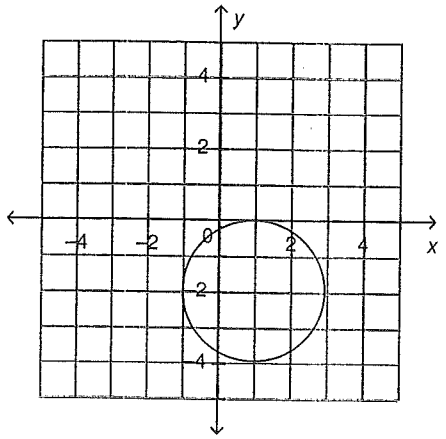
b) find x, if f(x) = 42

$$42 = 4x - 10$$

$$52 = 4x$$

$$13 = x$$

16. Identify the domain and range of the following graph. (3 marks)



Domain: $[-1, 3]$

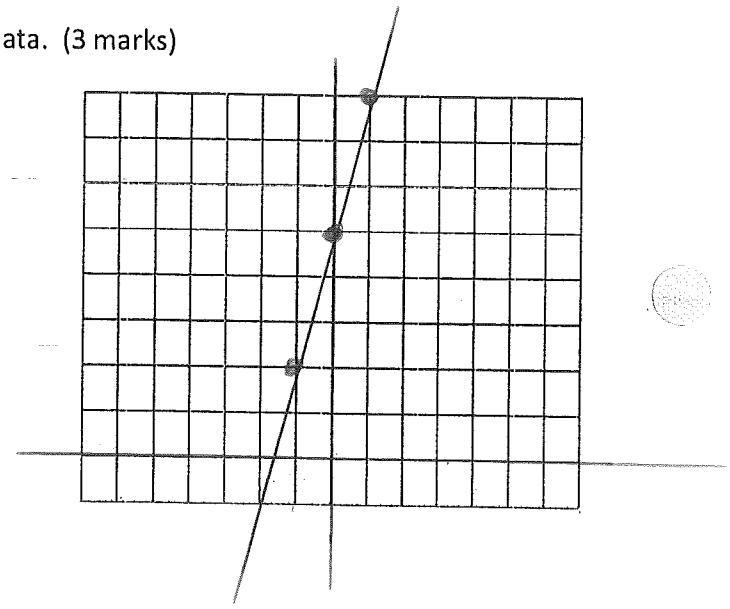
Range: $[-4, 0]$

17. Given the equation $y = 3x + 5$,

a) Create a table of values and graph the data. (3 marks)

$y = 3x + 5$

x	y
0	5
1	8
-1	2



b) What is the rate of change? (1 mark)

3

18. Gail leaves the house for her morning jog. She stops for a quick drink, and then continues jogging before stopping again to chat with a friend. She then jogs back home. Draw a graph of her distance in kilometers from home as a function of time in minutes. (3 marks)